



## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2022-1151; Project Identifier MCAI-2020-01603-T; Amendment 39-22303; AD 2023-01-09]**

**RIN 2120-AA64**

### **Airworthiness Directives; De Havilland Aircraft of Canada Limited (Type Certificate Previously Held by Bombardier, Inc.) Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), Department of Transportation (DOT).

**ACTION:** Final rule.

**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for certain De Havilland Aircraft of Canada Limited Model DHC-8-400 series airplanes. This AD was prompted by a report that electrical bonding jumpers had been installed on fuel scavenge lines even after the removal was required by previous AD rulemaking and that electrical bonding jumpers may have been installed in production or in service at other locations. This AD requires an inspection for electrical bonding jumpers and brackets on the fuel scavenge and vent lines at specific wing locations, and if installed, removal or modification of those jumpers and brackets. This AD also requires a records check to determine if certain maintenance tasks were performed and removal, modification, or rework if those tasks were performed. This AD also prohibits the use of earlier versions of certain maintenance tasks. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:**

*AD Docket:* You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2022-1151; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

*Material Incorporated by Reference:*

- For service information identified in this final rule, contact De Havilland Aircraft of Canada Limited, Dash 8 Series Customer Response Centre, 5800 Explorer Drive, Mississauga, Ontario, L4W 5K9, Canada; telephone North America (toll-free): 855-310-1013, Direct: 647-277-5820; email [thd@dehavilland.com](mailto:thd@dehavilland.com); website [dehavilland.com](https://www.dehavilland.com).

- You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2022-1151.

**FOR FURTHER INFORMATION CONTACT:** Joseph Catanzaro, Aerospace Engineer, Airframe and Propulsion Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7366; email [9-avs-nyacocos@faa.gov](mailto:9-avs-nyacocos@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Background**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain De Havilland Aircraft of Canada Limited Model DHC-8-400, -401, and -402 airplanes. The NPRM published in the *Federal Register* on September 9, 2022 (87 FR 55322). The NPRM was prompted by AD CF-2020-01, dated January 14, 2020, issued by Transport Canada, which is the aviation authority for Canada (referred to after this as the MCAI). The MCAI states it was reported that electrical bonding jumpers had been installed on fuel scavenge lines even after the removal was required by Transport Canada AD CF-2010-31, dated September 3, 2010 (which corresponds to FAA AD 2011-13-06, Amendment 39-16729 (76 FR 37258, June 27, 2011) (AD 2011-13-06)). Subsequent investigation showed that electrical bonding jumpers may have been installed in production or in service at other locations on the fuel scavenge and vent lines. If installed, these electrical bonding jumpers could affect the integrity of the fuel scavenge and vent lines' electrical bonding paths, which may lead to lightning strike induced fuel tank ignition.

In the NPRM, the FAA proposed to require an inspection for electrical bonding jumpers and brackets on the fuel scavenge and vent lines at specific wing locations, and if installed, removal or modification of those jumpers and brackets. The FAA also proposed to require a records check to determine if certain maintenance tasks were performed and removal, modification, or rework if those tasks were performed. The FAA also proposed to prohibit the use of earlier versions of certain maintenance tasks. The FAA is issuing this AD to address altered electrical bonding paths, which may lead to lightning strike-induced ignition of the fuel tank.

You may examine the MCAI in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2022-1151.

## **Discussion of Final Airworthiness Directive**

### **Comments**

The FAA received a comment from the Air Line Pilots Association, International (ALPA) who supported the NPRM without change.

The FAA received additional comments from Horizon Air. The following presents the comments received on the NPRM and the FAA's response to each comment.

### **Request to Remove Job Access and Close-up Requirements**

Horizon Air requested revising paragraphs (h)(1) and (2) of the proposed AD to remove the Job Set-up and Close-Out sections of the Accomplishment Instructions of Bombardier Service Bulletins 84-28-29 and 84-28-30, both dated October 17, 2018, from the requirements of the proposed AD. Horizon Air asserted that incorporating the Job Set-up and Close Out sections of the Accomplishment Instructions do not address the unsafe condition and also restrict an operator's ability to perform other maintenance in conjunction with the incorporation of the service bulletins.

In this case, the FAA agrees with the commenter's request to exclude the "Job Set-up" and "Close Out" sections of Bombardier Service Bulletin 84-28-29; and 84-28-30; both dated October 17, 2018. The FAA has revised paragraphs (h)(1) and (2) of this AD to require accomplishment of paragraph 3.B., "Procedure," of the Accomplishment Instructions of Bombardier Service Bulletins 84-28-29; or 84-28-30; both dated October 17, 2018; as applicable.

### **Request to Correct Typographical Errors**

Horizon Air requested correction of some typographical errors it found in paragraphs (h)(1) and (2) of the proposed AD. Horizon Air noted that the dates provided for the referenced service bulletins was published in the NPRM as October 1 instead of October 17 in two places. Horizon Air also pointed out that in paragraph (h)(2) of the

proposed AD, the first reference to a service bulletin seems to be in error and should be 84-28-30 instead of 84-28-29.

The FAA acknowledges the typographical errors and agrees to the request.

Paragraphs (h)(1) and (2) of this AD have been revised as requested.

### **Conclusion**

This product has been approved by the aviation authority of another country and is approved for operation in the United States. Pursuant to the FAA's bilateral agreement with this State of Design Authority, it has notified the FAA of the unsafe condition described in the MCAI referenced above. The FAA reviewed the relevant data, considered the comments received, and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on this product. Except for minor editorial changes, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator.

### **Related Service Information under 1 CFR Part 51**

De Havilland Aircraft of Canada Limited has issued Bombardier Service Bulletins 84-28-29; and 84-28-30; both dated October 17, 2018; which describe procedures for an inspection of certain wing stations in the left and right wings for the presence of brackets and electrical bonding jumpers on the fuel scavenge and vent lines, and if installed, removal or modification of those electrical bonding jumpers and brackets. These documents are distinct because they apply to different airplane configurations.

De Havilland Aircraft of Canada Limited has also issued the following Bombardier service information, which describes fuel system limitations, critical design configuration control limitations (CDCCLs), or airworthiness limitations for fuel tank systems. These documents are distinct because they apply to different airplane configurations.

- (Bombardier) Q400 Dash 8 Aircraft Maintenance Manual (AMM) Temporary Revision (TR) 28-170, dated November 2, 2018.

- (Bombardier) Q400 Dash 8 AMM TR 28-171, dated November 2, 2018.
- (Bombardier) Q400 Dash 8 AMM TR 28-166, dated November 2, 2018.
- (Bombardier) Q400 Dash 8 AMM TR 28-167, dated November 2, 2018.
- (Bombardier) Q400 Dash 8 AMM TR 28-168, dated November 2, 2018.
- (Bombardier) Q400 Dash 8 AMM TR 28-169 dated November 2, 2018.
- (Bombardier) Q400 Dash 8 AMM TR 28-163, dated August 1, 2018.
- (Bombardier) Q400 Dash 8 Maintenance Task Card Manual (MTCM)

Maintenance Task Card 000-28-520-704 (Config A01), Detailed Inspection of the Teflon Sleeve on the Fuel Tank Vent Line (LH), Revision 43, Amendment 0001, dated August 1, 2018.

- (Bombardier) Q400 Dash 8 MTCM Maintenance Task Card 000-28-620-704 (Config A01), Detailed Inspection of the Teflon Sleeve on the Fuel Tank Vent Line (RH), Revision 43, Amendment 0001, dated August 1, 2018.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

### **Costs of Compliance**

The FAA estimates that this AD will affect 53 airplanes of U.S. registry. The FAA estimates the following costs to comply with this AD:

#### **Estimated costs for required actions**

<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
Up to 94 work-hours X \$85 per hour = Up to \$7,990	\$0	Up to \$7,990	Up to \$423,470

### Estimated costs of on-condition actions

Labor cost	Parts cost	Cost per product
Up to 40 work-hours X \$85 per hour = Up to \$3,400	\$100	Up to \$3,500

The FAA has received no definitive data on which to base the cost estimates for the on-condition rework specified in this AD.

#### Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

#### Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and

(3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

#### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

#### **The Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

#### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

**2023-01-09 De Havilland Aircraft of Canada Limited (Type Certificate Previously Held by Bombardier, Inc.):** Amendment 39-22303; Docket No. FAA-2022-1151; Project Identifier MCAI-2020-01603-T.

#### **(a) Effective Date**

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

None.

#### **(c) Applicability**

This AD applies to De Havilland Aircraft of Canada Limited (Type Certificate previously held by Bombardier, Inc.) Model DHC-8-400, -401, and -402 airplanes, certificated in any category, having serial numbers 4001, 4003, and subsequent.

#### **(d) Subject**

Air Transport Association (ATA) of America Code 28, Fuel System.



**(e) Unsafe Condition**

This AD was prompted by a report that electrical bonding jumpers had been installed on fuel scavenge lines even after the removal was required by previous AD rulemaking and electrical bonding jumpers may have been installed in production or in service at other locations. The FAA is issuing this AD to address altered electrical bonding paths, which may lead to lightning strike-induced ignition of the fuel tank.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Definition**

For the purposes of this AD, “prohibited tasks” are identified as any task identified in paragraph (j) of this AD and any procedure or task that specifies fuel tank access using non-manufacturer-approved procedures.

**(h) Inspection and Modification**

(1) For airplanes having serial numbers 4001, and 4003 through 4118 inclusive: Within 6,000 flight hours or 36 months after the effective date of this AD, whichever occurs first, inspect wing stations  $\pm 79.7$ ,  $\pm 136.3$ ,  $\pm 173.2$ , and  $\pm 299.019$  in the left and right wings for the presence of brackets and electrical bonding jumpers installed on the fuel scavenge and vent lines, in accordance with paragraph 3.B., “Procedure,” of the Accomplishment Instructions of Bombardier Service Bulletin 84-28-29, dated October 17, 2018. If installed, remove or modify the electrical bonding jumpers and brackets as applicable, before further flight, in accordance with paragraph 3.B., “Procedure,” of the Accomplishment Instructions of Bombardier Service Bulletin 84-28-29, dated October 17, 2018.

(2) For airplanes having serial numbers 4119 through 4597 inclusive: Within 6,000 flight hours or 36 months after the effective date of this AD, whichever occurs first, inspect wing stations  $\pm 79.7$ ,  $\pm 136.3$ , and  $\pm 173.2$  in the left and right wings for the

presence of brackets and electrical bonding jumpers on the fuel scavenge and vent lines, in accordance with paragraph 3.B., "Procedure," of the Accomplishment Instructions of Bombardier Service Bulletin 84-28-30, dated October 17, 2018. If installed, remove or modify the electrical bonding jumpers and brackets as applicable, before further flight, in accordance with paragraph 3.B., "Procedure," of the Accomplishment Instructions of Bombardier Service Bulletin 84-28-30, dated October 17, 2018.

**(i) Verification and Rework for the Existing Maintenance Program**

(1) For airplanes having serial numbers 4001, and 4003 through 4597 inclusive, on which the actions required by paragraph (h)(1) or (2) of this AD have been done before the effective date of this AD: Within 60 days after the effective date of this AD, review the airplane maintenance records to confirm if any of the prohibited tasks (defined in paragraph (g) of this AD) were accomplished during or after compliance with paragraph (h)(1) or (2) of this AD. If any of the prohibited tasks were accomplished during or after compliance with paragraph (h)(1) or (2) of this AD, or if it cannot be conclusively confirmed that they were not accomplished during or after compliance with paragraph (h)(1) or (2) of this AD: Within 6,000 flight hours or 36 months after the effective date of this AD, whichever occurs first, do the actions required by paragraph (h)(1) or (2) of this AD, as applicable.

(2) For airplanes having serial numbers 4598 and subsequent, with an airplane date of manufacture, as identified on the identification plate of the airplane, dated before the effective date of this AD: Within 60 days after the effective date of this AD, review the airplane maintenance records to confirm if any of the prohibited tasks (defined in paragraph (g) of this AD) were accomplished on or after the airplane date of manufacture. If any of the prohibited tasks were accomplished on or after the airplane date of manufacture, or if it cannot be conclusively confirmed that they were not accomplished on or after the airplane date of manufacture: Within 6,000 flight hours or

36 months after the effective date of this AD, whichever occurs first, obtain and follow instructions for rework using a method approved by the Manager, New York ACO Branch, FAA; or Transport Canada; or De Havilland Aircraft of Canada Limited's Transport Canada Design Approval Organization (DAO). If approved by the DAO, the approval must include the DAO-authorized signature.

**(j) Maintenance Task Prohibitions**

For all airplanes: As of the effective date of this AD, comply with the prohibitions specified in paragraphs (j)(1) and (2) of this AD.

(1) It is prohibited to use the Bombardier aircraft maintenance manual (AMM) tasks identified in paragraphs (j)(1)(i) through (vii) of this AD, which are specified in the Bombardier Q400, PSM 1-84-2, Revision 63, dated October 5, 2018, or earlier revisions of these tasks. Temporary Revisions (TRs) including these AMM tasks, dated November 2, 2018, or earlier, are also prohibited for use except as specified in paragraph (j)(1)(i) through (vii) of this AD.

(i) Task 28-12-01-000-801, Removal of the Inboard Vent Line, with the exception of (Bombardier) Q400 Dash 8 AMM TR 28-170, dated November 2, 2018.

(ii) Task 28-12-01-400-801, Installation of the Inboard Vent Line, with the exception of (Bombardier) Q400 Dash 8 AMM TR 28-171, dated November 2, 2018.

(iii) Task 28-11-06-000-801, Removal of the Motive Flow Lines, with the exception of (Bombardier) Q400 Dash 8 AMM TR 28-166, dated November 2, 2018.

(iv) Task 28-11-06-400-801, Installation of the Motive Flow Lines, with the exception of (Bombardier) Q400 Dash 8 AMM TR 28-167, dated November 2, 2018.

(v) Task 28-11-16-000-801, Removal of the Scavenge Flow Lines, with the exception of (Bombardier) Q400 Dash 8 AMM TR 28-168, dated November 2, 2018.

(vi) Task 28-11-16-400-801, Installation of the Scavenge Flow Lines, with the exception of (Bombardier) Q400 Dash 8 AMM TR 28-169, dated November 2, 2018.

(vii) Task 28-10-00-280-806, Detailed Inspection of the Teflon Sleeve on the Fuel Tank Vent Line, LH and RH (FSL #284000-406), with the exception of (Bombardier) Q400 Dash 8 AMM TR 28-163, dated August 1, 2018.

(2) It is prohibited to use the Bombardier Q400 Dash 8 Maintenance Task Card Manual (MTCM) task cards identified in paragraphs (j)(2)(i) and (ii) of this AD that are specified in the Bombardier Q400 Dash 8 MTCM, PSM 1-84-7TC, Revision 43, dated May 5, 2018, or earlier revisions or amendments of these task cards. MTCM task card revisions or amendments dated August 1, 2018, or earlier, are also prohibited for use, except as specified in paragraphs (j)(2)(i) and (ii) of this AD.

(i) Bombardier Q400 Dash 8 MTCM Maintenance Task Card 000-28-520-704 (Config A01), Detailed Inspection of the Teflon Sleeve on the Fuel Tank Vent Line (LH), with the exception of (Bombardier) Q400 Dash 8 MTCM Maintenance Task Card 000-28-520-704 (Config A01), Detailed Inspection of the Teflon Sleeve on the Fuel Tank Vent Line (LH), Revision 43, Amendment 0001, dated August 1, 2018.

(ii) Bombardier Q400 Dash 8 MTCM Maintenance Task Card 000-28-620-704 (Config A01), Detailed Inspection of the Teflon Sleeve on the Fuel Tank Vent Line (RH), with the exception of (Bombardier) Q400 Dash 8 MTCM Maintenance Task Card 000-28-620-704 (Config A01), Detailed Inspection of the Teflon Sleeve on the Fuel Tank Vent Line (RH), Revision 43, Amendment 0001, dated August 1, 2018.

**(k) Other AD Provisions**

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs)*: The Manager, New York ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the certification office, send it to ATTN:

Program Manager, Continuing Operational Safety, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7300. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(2) *Contacting the Manufacturer:* For any requirement in this AD to obtain instructions from a manufacturer, the instructions must be accomplished using a method approved by the Manager, New York ACO Branch, FAA; or Transport Canada; or De Havilland Aircraft of Canada Limited's Transport Canada DAO. If approved by the DAO, the approval must include the DAO-authorized signature.

**(l) Additional Information**

(1) Refer to Transport Canada AD CF-2020-01, dated January 14, 2020, for related information. This Transport Canada AD may be found in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2022-1151.

(2) For more information about this AD, contact Joseph Catanzaro, Aerospace Engineer, Airframe and Propulsion Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7366; email [9-avs-nyacocos@faa.gov](mailto:9-avs-nyacocos@faa.gov).

**(m) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(i) (Bombardier) Q400 Dash 8 Aircraft Maintenance Manual (AMM) Temporary Revision (TR) 28-170, dated November 2, 2018.

(ii) (Bombardier) Q400 Dash 8 AMM TR 28-171, dated November 2, 2018.

(iii) (Bombardier) Q400 Dash 8 AMM TR 28-166, dated November 2, 2018.

(iv) (Bombardier) Q400 Dash 8 AMM TR 28-167, dated November 2, 2018.

(v) (Bombardier) Q400 Dash 8 AMM TR 28-168, dated November 2, 2018.

(vi) (Bombardier) Q400 Dash 8 AMM TR 28-169 dated November 2, 2018.

(vii) (Bombardier) Q400 Dash 8 AMM TR 28-163, dated August 1, 2018.

(viii) (Bombardier) Q400 Dash 8 Maintenance Task Card Manual (MTCM)

Maintenance Task Card 000-28-520-704 (Config A01), Detailed Inspection of the Teflon Sleeve on the Fuel Tank Vent Line (LH), Revision 43, Amendment 0001, dated August 1, 2018.

(ix) (Bombardier) Q400 Dash 8 MTCM Maintenance Task Card 000-28-620-704 (Config A01), Detailed Inspection of the Teflon Sleeve on the Fuel Tank Vent Line (RH), Revision 43, Amendment 0001, dated August 1, 2018.

(x) Bombardier Service Bulletin 84-28-29, dated October 17, 2018.

(xi) Bombardier Service Bulletin 84-28-30, dated October 17, 2018.

(3) For service information identified in this AD, contact De Havilland Aircraft of Canada Limited, Dash 8 Series Customer Response Centre, 5800 Explorer Drive, Mississauga, Ontario, L4W 5K9, Canada; telephone North America (toll-free): 855-310-1013, Direct: 647-277-5820; email [thd@dehavilland.com](mailto:thd@dehavilland.com); website [dehavilland.com](http://dehavilland.com).

(4) You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email [fr.inspection@nara.gov](mailto:fr.inspection@nara.gov), or go to: [www.archives.gov/federal-register/cfr/ibr-locations.html](http://www.archives.gov/federal-register/cfr/ibr-locations.html).

Issued on January 10, 2023.

Christina Underwood, Acting Director,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.

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